

From: Hodson, Elke

Location: Conference code

Importance: Normal

Subject: Accepted: SCC - Call to discuss final comments on NAS charge

Start Date/Time: Thur 5/14/2015 6:00:00 PM

End Date/Time: Thur 5/14/2015 7:00:00 PM

From: Laity, Jim

Location: Call in

Conference code

Importance: Normal

Subject: Tentative: SCC - Call to discuss final comments on NAS charge

Start Date/Time: Thur 5/14/2015 6:00:00 PM

End Date/Time: Thur 5/14/2015 7:00:00 PM

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From: Linn, Joshua
Importance: Normal
Subject: Accepted: check-in call on SCC
Start Date/Time: Mon 5/11/2015 3:00:00 PM
End Date/Time: Mon 5/11/2015 3:30:00 PM

;

To: Day, Robert[RDay@nas.edu]
From: Day, Robert
Sent: Thur 7/2/2015 4:51:18 PM
Subject: FW: Proposal - 10002688 Estimating the Social Cost of Carbon
0728_001.pdf

Robert “Skip” Day

Contract Manager

Office of Contracts and Grants

National Academy of Sciences

500 Fifth Street, N.W. KECK 1051

Washington, D.C. 20001

202-334-3873 (Telephone)

202-334-2797 (Fax)

From: Day, Robert
Sent: Thursday, June 18, 2015 5:11 PM
To: Hodson, Elke (Elke.Hodson@Hq.Doe.Gov)
Cc: Torrusio, Michele (Michele.Torrusio@Hq.Doe.Gov); Boron, David (David.Boron@hq.doe.gov); Hyman, Denise; Winston-Holloway, Kim; O'Connell, MaryEllen
Subject: Proposal - 10002688 Estimating the Social Cost of Carbon

Dear Dr. Hodson:

Ex 5

The Responsible Staff Officer for these activities is Mary Ellen O'Connell. She may be contacted regarding program matters at (202) 334-2607. I am responsible for business negotiations and may be reached at (202) 334-3873 or this email.

Kind regards,

Robert "Skip" Day

Contract Manager

Office of Contracts and Grants

National Academy of Sciences

500 Fifth Street, N.W. KECK 1051

Washington, D.C. 20001

202-334-3873 (Telephone)

202-334-2797 (Fax)

To: 'O'Connell, MaryEllen'[moconnell@nas.edu]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; 'Linn, Joshua'[EOP_email/phone]
Cc: Hodson, Elke[Elke.Hodson@Hq.Doe.Gov]; Marten, Alex[Marten.Alex@epa.gov]; Pineau, Marisa Gerstein[MGPineau@nas.edu]
From: Torrusio, Michele
Sent: Tue 6/30/2015 7:36:15 PM
Subject: RE: Launch meeting

Works for DOE.

From: O'Connell, MaryEllen [mailto:moconnell@nas.edu]
Sent: Tuesday, June 30, 2015 3:30 PM
To: 'Kopits, Elizabeth'; 'Linn, Joshua'
Cc: Hodson, Elke; 'Marten, Alex'; Torrusio, Michele; Pineau, Marisa Gerstein
Subject: Launch meeting

I think it would be best if the presumed co-chairs were able to attend this in person, if possible; since one of them is out of town, but is willing to come in for the day if it's on July 30, could we aim for a meeting between 10:30 and 3:30 on the 30th?

Maybe those on this email who will be involved could save that time while the schedules for others who need to be involved are checked? Thoughts?

Mary Ellen

From: O'Connell, MaryEllen
Sent: Monday, June 29, 2015 4:48 PM
To: 'Kopits, Elizabeth'; Linn, Joshua
Cc: Hodson, Elke (Elke.Hodson@Hq.Doe.Gov); Marten, Alex; Torrusio, Michele; Pineau, Marisa Gerstein
Subject: RE: NAS/SCC conference call?

It looks like the 15th won't work for the envisioned co-chairs. The good news is that anytime on July 30th would work, as would between noon and 3pm on the 29th. Those dates are probably more realistic in any case.

Let us know which dates/times you'd like us to hold. Would you envision coming to the NRC or would you want us to go to DOE or somewhere else?

Mary Ellen

From: Kopits, Elizabeth [<mailto:Kopits.Elizabeth@epa.gov>]
Sent: Friday, June 26, 2015 10:07 AM
To: Linn, Joshua; O'Connell, MaryEllen
Cc: Hodson, Elke (Elke.Hodson@Hq.Doe.Gov); Marten, Alex; Torrusio, Michele; Pineau, Marisa Gerstein
Subject: Re: NAS/SCC conference call?

Super!

Mary Ellen- can you check if Maureen and Richard are available on both the 15th and 29th/30th, and what times would work for them?

Michele - do you have the ability to see Elke's calendar? Is she in the office on those days too?

If everyone is available, can we each put a placeholder in for a time on both days? (I can deal with EPA calendars, perhaps Josh can do EOP, and Michele can do Elke's?)

Thanks,

Elizabeth

From: Linn, Joshua < **EOP email/phone** >
Sent: Friday, June 26, 2015 9:43 AM
To: Kopits, Elizabeth; O'Connell, MaryEllen
Cc: Hodson, Elke (Elke.Hodson@Hq.Doe.Gov); Marten, Alex; Torrusio, Michele; Pineau, Marisa Gerstein
Subject: RE: NAS/SCC conference call?

July 15, 29, or 30 would work for us.

From: Kopits, Elizabeth [<mailto:Kopits.Elizabeth@epa.gov>]

Sent: Friday, June 26, 2015 8:51 AM

To: O'Connell, MaryEllen

Cc: Linn, Joshua; Hodson, Elke (Elke.Hodson@Hq.Doe.Gov); Marten, Alex; Torrusio, Michele; Pineau, Marisa Gerstein

Subject: Re: NAS/SCC conference call?

Thanks Mary Ellen. This is helpful to get the ball rolling.

Josh- do you want to check on Jim and Rick's availability for after 2pm on the 28th or anytime on the 29th, or possibly the 30th? The 15th is probably ambitious but if most folks are available then I think it would be super to hold an hour slot on that day too.

Thanks,

Elizabeth

Sent from my iPhone

On Jun 26, 2015, at 8:26 AM, "O'Connell, MaryEllen" <moconnell@nas.edu> wrote:

I guess this is confirmation of the point raised about how difficult it will be to schedule a launch meeting with so many people given vacations, but it occurred to me after we spoke that I am on vacation and out of town the week of July 20. I also have an all-day training commitment that can not be moved on July 16-17 and an all-day meeting that has been scheduled for some time on July 27-28. It ends at 2:00 on the 28th, so that would be possible and I would aim to be flexible on other days, but I do have these prior commitments.

Mary Ellen

From: Linn, Joshua [<mailto:> EOP email/phone]

Sent: Wednesday, June 24, 2015 4:44 PM

To: O'Connell, MaryEllen; 'Hodson, Elke (Elke.Hodson@Hq.Doe.Gov)'; Kopits, Elizabeth; Marten, Alex; Torrusio, Michele

Subject: NAS/SCC conference call?

It would be great if we can set up a call to discuss a few things related to the proposal. Here are the things I know about, but there may be others:

- Suggestions for staff and committee members
- Edits/comments on summary and background sections
- Wording of phase 1
- Phase 1 schedule
- Setting up launch meeting

For dates/times, please let me know as soon as possible which of the following would work:

Thursday (6/25)

10:15-1:30

4:30-5

After 6

Friday (6/26)

9-10

After 1:30

To: Hodson, Elke[Elke.Hodson@Hq.Doe.Gov]
Cc: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Harvey, Alecia
Sent: Tue 5/19/2015 3:38:42 PM
Subject: Final SOW....
[IA Statement of Work with DOE_ek_clean.docx](#)

Please have this signed, scanned and emailed back to me as soon as possible.
Thanks!

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Mon 7/20/2015 1:16:08 PM
Subject: RE: SCC in short tons?

Ex 5

From: Kopits, Elizabeth
Sent: Monday, July 20, 2015 9:14 AM
To: Macpherson, Alex
Cc: Shouse, Kate; Marten, Alex
Subject: Re: SCC in short tons?

Ex 5

Sent from my iPhone

On Jul 20, 2015, at 9:06 AM, "Macpherson, Alex" <Macpherson.Alex@epa.gov> wrote:

Ex 5

From: Kopits, Elizabeth
Sent: Monday, July 20, 2015 9:06 AM
To: Shouse, Kate
Cc: Macpherson, Alex; Marten, Alex

Subject: Re: SCC in short tons?

Ex 5

Sent from my iPhone

On Jul 20, 2015, at 9:03 AM, "Shouse, Kate" <Shouse.Kate@epa.gov> wrote:

Ex 5

From: Kopits, Elizabeth
Sent: Monday, July 20, 2015 9:02 AM
To: Macpherson, Alex
Cc: Marten, Alex; Shouse, Kate
Subject: Re: SCC in short tons?

Ex 5

Sent from my iPhone

On Jul 20, 2015, at 8:50 AM, "Macpherson, Alex" <Macpherson.Alex@epa.gov> wrote:

Ex 5

From: Marten, Alex
Sent: Monday, July 20, 2015 8:47 AM
To: Kopits, Elizabeth
Cc: Shouse, Kate; Macpherson, Alex
Subject: Re: SCC in short tons?

Ex 5

Looping in Alex. He has probably been brought up to speed already on this ask, but just in case.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

On Jul 20, 2015, at 7:32 AM, Kopits, Elizabeth <Kopits.Elizabeth@epa.gov> wrote:

Ex 5

Sent from my iPhone

On Jul 20, 2015, at 7:28 AM, "Shouse, Kate" <Shouse.Kate@epa.gov> wrote:

Ex 5

Any concerns with showing SCC in short tons?

Sent from my iPhone

To: Marten, Alex[Marten.Alex@epa.gov]
Cc: Lueken, Roger[Roger.Lueken@brattle.com]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Bishop, Heidi
Sent: Mon 7/13/2015 8:19:14 PM
Subject: RE: Social Cost of Carbon Data

Thank you so much Alex- this is appreciated. We'll reach out if we run into issues.

Best,

Heidi

From: Marten, Alex [mailto:Marten.Alex@epa.gov]
Sent: Monday, July 13, 2015 4:17 PM
To: Bishop, Heidi
Cc: Lueken, Roger; Kopits, Elizabeth
Subject: RE: Social Cost of Carbon Data

Hi Heidi,

Attached are the revised results based on the two minor technical corrections in the July 2015 revision to the 2013 SCC TSD.

Please let me know if you have any questions.

--

Alex L. Marten
phone: (202) 566-2301

email: marten.alex@epa.gov

From: Bishop, Heidi [<mailto:Heidi.Bishop@brattle.com>]
Sent: Wednesday, July 08, 2015 5:12 PM
To: Marten, Alex
Cc: Lucken, Roger
Subject: FW: Social Cost of Carbon Data

Dear Alex,

I hope this message finds you well. We heard that there has been a 2015 update to the Social Cost of Carbon:

<https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>

Are you able to provide the raw data again?

Thanks in advance for any help you can provide,

Heidi

HEIDI BISHOP
Senior Policy and Marketing Analyst
The Brattle Group

Direct +1.202.419.3337
Mobile +1.410.713.2566
Main +1.202.955.5050

brattle.com

From: Marten, Alex [<mailto:Marten.Alex@epa.gov>]
Sent: Monday, March 30, 2015 3:07 PM
To: Bishop, Heidi; Barron, Alex; Duke, Rick
Cc: Lueken, Roger; McGartland, Al; Kopits, Elizabeth
Subject: RE: Social Cost of Carbon Data

Hi Heidi,

I have attached the full set of SCC estimates from the simulations underlying the numbers in the 2013 SCC TSD.

Please let me know if you have any questions.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bishop, Heidi [<mailto:Heidi.Bishop@brattle.com>]
Sent: Monday, March 30, 2015 2:30 PM
To: Barron, Alex; Duke, Rick
Cc: Lueken, Roger; Marten, Alex; McGartland, Al; Kopits, Elizabeth
Subject: RE: Social Cost of Carbon Data

Thank you for offering to assist. We are looking for the full SCCs out through time from the three models and appreciate any help you can provide.

Many thanks,

Heidi

HEIDI BISHOP

Senior Policy and Marketing Analyst
The Brattle Group

Direct +1.202.419.3337

Mobile +1.410.713.2566

Main +1.202.955.5050

brattle.com

From: Barron, Alex [<mailto:Barron.Alex@epa.gov>]

Sent: Friday, March 27, 2015 7:18 PM

To: Duke, Rick

Cc: Fox-Penner, Peter; Bishop, Heidi; Lueken, Roger; Marten, Alex; McGartland, Al; Kopits, Elizabeth

Subject: Re: Social Cost of Carbon Data

Adding folks from NCEE who can be in touch next week.

Sent from my iPhone

On Mar 27, 2015, at 7:13 PM, Duke, Rick EOP email/phone wrote:

Alex: can you help? thks

From: Fox-Penner, Peter [<mailto:Peter.Fox-Penner@brattle.com>]

Sent: Friday, March 27, 2015 4:45 PM

To: Duke, Rick

Cc: Bishop, Heidi; Lueken, Roger

Subject: Social Cost of Carbon Data

Hi Rick –

Hope all is well with you.

I know you might not be deeply involved in the SCC, but I wonder if you can introduce me to someone who could steer us to some backup data – namely the full set of SCCs out through time from the three models.

If you are working on this, and/or want to talk about it, would love to. We are working on the Minnesota PUC case that is applying SCC to utilities.

All the best and thanks

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To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Kopits, Elizabeth
Sent: Tue 6/30/2015 1:22:44 PM
2015 06 29 potential committee suggestions - alm_ek.docx

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Shouse, Kate
Sent: Tue 6/16/2015 2:54:27 PM
Subject: RE: Breaking news: HD Phase 2 signature targeted for Friday

Thanks! Wednesday is fine too – that will give me enough time to respond and finalize. Thanks for sending the latest RTC, will let you know if I see anything notable.

From: Kopits, Elizabeth
Sent: Tuesday, June 16, 2015 10:38 AM
To: Shouse, Kate
Subject: RE: Breaking news: HD Phase 2 signature targeted for Friday

So sorry I haven't sent comments on the memo yet! I will try my best to do it before I leave today.

I haven't heard anything more on the RTC timing, but Jim sent the latest version late yesterday. I think it just has very minor edits but haven't had a chance to look yet. Will forward to you in sec. Let me know if you catch anything.

From: Shouse, Kate
Sent: Tuesday, June 16, 2015 10:33 AM
To: Kopits, Elizabeth
Subject: FW: Breaking news: HD Phase 2 signature targeted for Friday

Ex 5

Thanks!

Kate

From: Yanca, Catherine
Sent: Tuesday, June 16, 2015 10:30 AM
To: HD GHG 2
Subject: Breaking news: HD Phase 2 signature targeted for Friday

Hi all,

Ex 5	Stay tuned for further news or guidance to come.
-------------	--

Almost there!

~Cay

To: Sarofim, Marcus[Sarofim.Marcus@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Shouse, Kate[Shouse.Kate@epa.gov]
From: Marten, Alex
Sent: Fri 6/12/2015 4:58:51 PM
Subject: RE: CH4-O3 review

That is great news on the acceptance!

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Sarofim, Marcus
Sent: Friday, June 12, 2015 12:45 PM
To: Kopits, Elizabeth
Cc: Marten, Alex; Shouse, Kate
Subject: RE: CH4-O3 review

Just thought I'd let everyone know that the CH4-O3 paper has indeed been accepted.

Ex 5

Ex 5

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
WJC East 4410M
Environmental Scientist
Climate Science & Impacts Branch

From: Kopits, Elizabeth
Sent: Monday, June 08, 2015 7:24 AM
To: Sarofim, Marcus

Cc: Marten, Alex
Subject: RE: CH4-O3 review

Hi Marcus,

Sounds good about landfills and o&g. Thanks!

Ex 5

Thanks,
Elizabeth

From: Sarofim, Marcus
Sent: Friday, June 05, 2015 5:15 PM
To: Kopits, Elizabeth
Subject: CH4-O3 review

Hi Elizabeth,

- 1) We've okayed your edits to the CH4/O3 language on the Landfill rule

2) Similar language will also need to be updated in the Oil & Gas rule – I’ve emailed Bruce to see if it is okay to be making more edits there right now.

Ex 5

Thank you!

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
WJC East 4410M
Environmental Scientist
Climate Science & Impacts Branch

To: Cox, Michael[Cox.Michael@epa.gov]
Cc: Munis, Ken[Munis.Ken@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Moore, Chris[Moore.Chris@epa.gov]; Bowen, Jennifer[Bowen.Jennifer@epa.gov]
From: Snyder, Brett
Sent: Fri 5/22/2015 9:22:26 PM
Subject: RE: Climate Change Adaptation
[PBL 2014 Costs and benefits of climate change adaption and mitigation 1198.pdf](#)
[benefits-workshop-full-report Pew 2009.pdf](#)
[pub_nwp_costs_benefits_adaptation UN 2011.pdf](#)
[CBA Simple Guidance ENG FORMATTED 2014.pdf](#)

Hi Mike:

Nice to hear from you this week.

I have started to search a bit, and have a few possible leads. Most are “bigger picture” views of the questions you ask about methods of looking at cost-benefit analysis of adaptation. Some include illustrations, looking at country impacts and other case studies. Don’t have much on studying this at a project-level, though appears FEMA is introducing this into some of the state level planning requirements.

<http://rhg.com/reports/climate-prospectus> **American Climate Prospectus: Economic Risks in the United States, 2014 report**

Trevor Houser, Robert Kopp, Solomon Hsiang, Michael Delgado, Amir Jina, Kate Larsen, Michael Mastrandrea, Shashank Mohan, Robert Muir-Wood, DJ Rasmussen, James Rising, and Paul Wilson | June 24, 2014

The United States faces a range of economic risks from global climate change — from increased flooding and storm damage, to climate-driven changes in crop yields and labor productivity, to heat-related strains on energy and public health systems. The *American Climate Prospectus* (ACP) provides a groundbreaking new analysis of these and other climate risks by region of the country and sector of the economy. By linking state-of-the-art climate models with econometric research of human responses to climate variability and cutting edge private sector risk assessment tools, the ACP offers decision-makers a data driven assessment of the specific risks they face.

The ACP is the result of an independent assessment of the economic risks of climate change commissioned by the [Risky Business Project](#). In conducting this assessment, RHG convened a research team, co-led by climate scientist [Dr. Robert Kopp](#) of Rutgers University and economist

Dr. Solomon Hsiang of the University of California, Berkeley, and partnered with Risk Management Solutions (RMS), the world's largest catastrophe-modeling company for insurance, reinsurance, and investment-management companies. The team's research methodology and draft work was reviewed by an Expert Review Panel (ERP) composed of leading climate scientists and economists, acknowledged within the report.

PBL 2014 report on Costs and benefits of climate change adaptation and mitigation report (pdf attached)

This policy brief summarises the current knowledge about the costs and benefits of climate change adaptation and mitigation, with the aim to support strategic policymaking on climate change. Mitigation costs are defined as the costs of reducing greenhouse gas emissions; adaptation costs refer to making society more resilient to climate change. The benefits of mitigation consist of the avoided damage due to less climate change, while the benefits of adaptation consist of avoided damage by adjusting to climate change. All costs and benefits were set against those under a scenario without mitigation and adaptation. As this policy brief does not assess specific mitigation policies or measures, but instead provides overall model estimates of the costs and benefits related to such measures, it cannot be regarded as a true cost-benefit analysis. This implies that the policy brief does not discuss how climate policies should be implemented, but it does provide insight into whether and to which degree climate action should be taken. The policy brief focuses on three regional scales: the world, the EU, and the Netherlands.

Benefit workshop full report - 2009 event (pdf attached)

The Pew Center on Global Climate Change is pleased to present the proceedings of its March 2009 workshop, *Assessing the Benefits of Avoided Climate Change: Cost-Benefit Analysis and Beyond*. Even though significant uncertainties about future climate impacts remain, government decision - making requires consideration of all economic costs and benefits if policies are to maximize the social benefits of regulatory decisions. This workshop was convened to explore the current state of the art in analyzing climate - related benefits, its strengths and weaknesses, and ways to improve it. Placing a value on the benefits of reducing greenhouse gas emissions is quickly moving from the pages of academic journals and IPCC reports to the front burner in regulatory decision making. This policy revolution began with the growing acceptance of the science linking climate change to adverse impacts on public health and welfare and the potential catastrophic risks associated with continued greenhouse gas emissions. In the absence of federal action to limit climate change, concerned citizens and state governments intervened through the courts. The 2007 decision of the Supreme Court in *Massachusetts v. EPA* set down a clear marker that the consequences of climate change cannot simply be disregarded in regulatory decisions. Even without new climate legislation, therefore, limited steps to reduce greenhouse gas emissions have begun to unfold through individual regulatory decisions across a number of agencies.

http://www.mckinseysociety.com/downloads/reports/Economic-Development/ECA_Shaping_Climate%20Resilient_Development.pdf

A report prepared for UNEP on Economics of climate change adaptation
<http://www.unep.org/climatechange/adaptation/>

<http://www.unep.org/climatechange/adaptation/EconomicsandFinance/Economicsofclimatechangeadaptation/tal>

Adaptation activities come with a range of costs, and associated implications for the need for financial investments. With resources from Global Environment Facility, UNEP has supported the work of the Economics of Climate Adaptation Working Group (a partnership between the Global Environment Facility, McKinsey & Company, Swiss Re, the Rockefeller Foundation, ClimateWorks Foundation, the European Commission, and Standard Chartered Bank) on the development of a framework to guide decision-makers in understanding and addressing issues around potential climate-related losses to economies and societies, the options for averting such losses, and the investment that will be required to fund those measures. The report produced by the Working Group outlines a fact-based risk management approach that national and local leaders can use to understand the impact of climate on their economies – and identify actions to minimize that impact at the lowest cost to society.

2011 Pub-NWP costs benefits of adaptation – another United Nations effort (pdf attached)

This publication has been developed under the Nairobi work programme on impacts, vulnerability and adaptation to climate change, and provides an introduction to a range of different assessment approaches and methodologies and shares best practices and lessons learned. It builds upon activities and contributions from the Nairobi work programme and its partners. This publication aims to:

- Elaborate on the role and purpose of assessing the costs and benefits of adaptation options in the adaptation process;
- Introduce a range of key methodological issues;
- Explain the most commonly used assessment approaches;
- Describe lessons learned and good practices;

- Provide a glossary of the most commonly used terms;
- Provide a bibliography of useful resources and references.

The publication does not, however, claim to be a comprehensive assessment of all possible approaches, recommend one specific assessment technique above another – even though it does illustrate the variety of approaches, including their strengths and shortcomings; nor does it provide answers as to how much adaptation measures might cost – but it does provide support to help choose between numerous possible options.

2011 World Bank series of case studies and synthesis report

<http://www.worldbank.org/en/news/feature/2011/06/06/economics-adaptation-climate-change-country-case-studies>

The World Bank's global study on adaptation costs—[Economics of Adaptation to Climate Change](#) (EACC)—released in 2009 found that the price tag of adapting to climate change in developing countries to be \$75-\$100 billion per year for the period 2010 to 2050. While this equals only 0.2% of the projected GDP of all developing countries, it is as much as 80% of total current ODA. For Sub-Saharan Africa, the study estimated annual adaptation costs of \$14-17 billion.

A parallel exercise was done in partnership with policymakers and stakeholders in seven countries to understand what these global costs imply for individual countries. The country studies were done to help decision makers better assess climate change risks and design appropriate adaptation strategies.

Last, you probably found this already on **FEMA's benefit-cost materials**:

<http://www.fema.gov/benefit-cost-analysis>

They have some guidance specific to sea level rise, but I haven't had occasion to use their tools or explore the site to know what all is there, or the ease of its use.

Found a briefing slide deck from 2014 on climate change: <http://www.fema.gov/media-library->

[data/139722677753-6a93835a0eb470ecb7e5c6b9c3796b9a/NAC+Climate+Adaptation.031914+508c.pdf](#)

Sorry, but I don't know more about the FEMA program and cannot answer your question about which communities have used these tools and possibly incorporate climate risks. Might have some more information here: <http://www.fema.gov/climate-change>

And there are new provisions taking effect next year for disaster planning (2015 article in Mother Jones): <http://www.motherjones.com/environment/2015/03/fema-governors-climate-change>

The Federal Emergency Management Agency wants states to do a better job planning for the natural disasters they are likely to face in a warming world. Beginning next year, the agency will require states to evaluate the risks that climate change poses to their communities in order to gain access to millions of dollars of disaster preparedness funding.

The new requirement won't affect the post-disaster relief that communities receive after being devastated by hurricanes or tornados. Rather, the change comes as part of FEMA's revision to its State Hazard Mitigation Plan guidelines. Under its Hazard Mitigation Assistance program, FEMA allocates disaster preparedness funds to states that submit formal documents outlining the risks their communities face and how they plan to address them. These efforts might include purchasing flood-prone properties to prevent future losses, building air-conditioned refuges for major heat waves, or creating procedures for shutting down or moving equipment in a floodplain.

The revised guidelines require states to consider the impacts of "changing environment or climate conditions" in order for their plans to be approved for funding. The guidelines further explain that "the challenges posed by climate change, such as more intense storms, frequent heavy precipitation, heat waves, drought, extreme flooding, and higher sea levels could significantly alter the types and magnitudes of hazards impacting states in the future."

"A state that does not include climate-related impacts in its emergency planning will be closing its eyes to one major cause of extreme events," says Michael Gerrard of Columbia University.

Experts on climate adaptation and disaster mitigation say the new rule will help states protect their residents. "It's an important way to get states to think about the risks and vulnerabilities they face from natural disasters and the contribution that climate change makes to increasing the frequency and scope of natural disasters," said Rob Moore, a policy analyst for the Natural Resources Defense Council, who has pushed for this change for several years. "It should have a big impact."

Michael Gerrard, who directs the Sabin Center for Climate Change Law at Columbia University, agrees. "A state that does not include climate-related impacts in its emergency planning will be closing its eyes to one major cause of extreme events and not fully protecting its population," he said.

I am also sharing this with a couple of other staff in the office, in hopes that they can chime in with some additional (better) leads for you.

Hope this helps a bit.

Brett Snyder

USEPA, NCEE

202-566-2261

From: Cox, Michael
Sent: Tuesday, May 19, 2015 4:40 PM
To: Snyder, Brett
Cc: Cox, Michael; Munis, Ken
Subject: Climate Change Adaptation

Brett: Per our conversation, here are a few questions I have

- Do you know of organizations that have developed economic benefit/cost justification for upgrades for climate change adaptation and resilience?
- How do you consider or calculate the economic benefits of adaptation actions?
- Do you know of any communities that have used the FEMA benefit/cost analysis for hazard mitigation funding and have they incorporated climate risks into this assessment?
- How do you show or calculate the cost of not adapting?

Thanks.

Michael Cox

Office of Environmental Assessment

US EPA Region 10, 1200 Sixth Avenue, Suite 900

Seattle, WA 98101

206-553-1597

cox.michael@epa.gov

To: OP-NCEE-Everyone[OPNCEEEveryone@epa.gov]
From: McGartland, Al
Sent: Fri 1/30/2015 5:39:06 PM
Subject: FW: Latest from JAERE, our new journal

Apologize for the duplication –most of you probably have this in your inbox. The email provides the list of articles in JAERE. NCEE has a nice presence on the list. Also there are many articles dealing with issues where we are “front and center”.

From: info@aere.org [mailto:info@aere.org]
Sent: Friday, January 30, 2015 10:21 AM
To: McGartland, Al
Subject: Latest from JAERE, our new journal

Dear current and past AERE members,

With the start of 2015 one of the goals of the *JAERE* editorial group is to keep AERE members and friends better informed when new journal content becomes available online. To that end we plan to send a note to members when a new issue appears online, beginning with volume 2 issue 1 in March. In terms of existing content, you will find a full listing of the volume 1 articles below. If your library subscribes to *JAERE* via its package with the University of Chicago Press, you can access the content via the *JAERE* website

www.journals.uchicago.edu/jaere

If your library does not have a *JAERE* subscription, please consider making a request to obtain one. Information on personal electronic access for AERE members will be provided in the near future. In the meantime, you can help publicize *JAERE* by pointing out relevant content to colleagues and looking to cite its articles in your research.

Warm regards,

Daniel J. Phaneuf

Editor in Chief, *JAERE*

Volume 1 issues 1-2

Fenichel, Eil and Joshua Abbott, “Natural capital: from metaphor to measurement.”

Weitzman, Martin, “Can negotiating a uniform carbon price help to internalize the global warming externality?”

Baylis, Kathy, Don Fullerton, and Daniel Karney, “Negative leakage.”

Favero, Alice and Robert Mendelsohn, “Using markets for woody biomass energy to sequester carbon in forests.”

Linn, Joshua, Erin Mastrangel, and Dallas Burtraw, “Regulating greenhouse gases from coal power plants under the Clean Air Act.”

Kellenberg, Derek and Arik Levinson, “Waste of effort? International environmental agreements.”

Carson, Richard, Theodore Groves, and John List, “A Theoretical and Experimental Exploration of a Single Binary Choice.”

Holzer, Jorge and Kenneth McConnell, “Harvest allocation without property rights.”

Tsvetanov, Tsvetan and Kathleen Segerson, “The welfare effects of energy efficiency standards when choice sets matter.”

Nordhaus, William, “Estimates of the social cost of carbon: concepts and results from the DICE 2013R model and alternative approaches.”

Volume 1 issue 3

Venables, Anthony, “Depletion and development: natural resource supply with endogenous field opening.”

Greaker, Mads, Michael Hoel, and Knut Einar Rosendahl, “Does a renewable fuel standard for biofuels reduce climate costs?”

Hong, Fuhai and Larry Karp, “International environmental agreements with endogenous or exogenous risk.”

Pindyck, Robert, “Risk and return in the design of environmental policy.”

Eichner, Thomas and Ruddiger Pethig, “Self-enforcing environmental agreements, trade, and demand and supply side mitigation policy.”

Volume 1 issue 4

Goodkind, Andrew, Jay Coggins, and Julian Marshall, “A spatial model of air pollution: the impact of the concentration-response function.”

Adamowicz, Vic, Mark Dickie, Shelby Gerking, Marcella Veronesi, and David Zinner, “Household decision making and valuation of environmental health risks to parents and their children.”

Ferris, Ann, Ronald Shadbegian, and Ann Wolverton, “The effect of environmental regulation on power sector employment: phase I of the title IV SO₂ trading program.”

Newell, Richard and Juha Siikamaki, "Nudging energy efficiency behavior: the role of information labels."

This e-mail was sent from Association of Environmental and Resource Economists (info@aere.org) to mcgartland.al@epa.gov.

To unsubscribe, please click on this link and follow the instructions: [Unsubscribe](#)

Association of Environmental and Resource Economists, 13006 Peaceful Terrace Silver Spring MD 20904, Phone Number: (301) 879-4753, Fax Number: (301) 879-4778, Email Address: lynnvn@vandermanagement.com, Website : www.aere.org

To: Marten, Alex[Marten.Alex@epa.gov]; Ferris, Ann[Ferris.Ann@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Klemick, Heather[Klemick.Heather@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; Helfand, Gloria[helfand.gloria@epa.gov]
Cc: McGartland, Al[McGartland.Al@epa.gov]
From: Bowen, Jennifer
Sent: Mon 1/26/2015 9:02:56 PM
Subject: FW: Comments for CEA
DRAFT Energy ERP Chapter 1-9-15 EPA Combined Comments.docx

Thank you all for your very quick review and comment on the draft ERP chapter last week. I wanted to share what was forwarded to CEA – see below. We were able to incorporate most of the comments we received.

Please note that this should be held closely and not circulated.

Thanks, again.

Jenny

From: Barron, Alex
Sent: Tuesday, January 20, 2015 6:34 PM
To: Linn, Joshua
Cc: McGartland, Al; DeMocker, Jim; Bowen, Jennifer
Subject: FW: Comments for CEA

Dear Josh,

Thank you for the opportunity to comment on the draft Energy Chapter of the Economic Report of the President. We would like to call your attention to three major comments below. In addition to these three concerns, we are also attaching a redline/strikeout file that provides a variety of suggested edits that we compiled. We would like to pass them along for your consideration as appropriate.

Non-Responsive

See: <http://www.whitehouse.gov/the-press-office/2015/01/14/fact-sheet-administration-takes-steps-forward-climate-action-plan-anno-1>

Non-Responsive

Non-Responsive

Thanks again for the opportunity to review and please contact us if you require any clarification or we can provide further help,

Alex

To: Shouse, Kate[Shouse.Kate@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Mon 1/26/2015 12:01:02 AM
Subject: Re: RTC current version
[2015 01 25 SCC RTC - epa comments - clean.docx](#)
[2015 01 25 SCC RTC - epa comments - tracked.docx](#)

Hi Kate,

I went through and addressed almost all of our outstanding issues. One problem I was having is that that document was starting to get _really_ messy (and started crashing word for me). In some places in was showing changes from when we had edited each other numerous times. Since this information isn't really useful to OMB/CEA I went ahead and just accepted all changes. Then we can just to a compare with what they sent us and send back a clean version plus one with just one set of tracked changes. I also dropped some comments that were discussions between us or rationale for changes that shouldn't be controversial. I hope you're OK with this approach.

The attached has a few outstanding comments for you. If you could take a look on Monday that would be great. If they can't be addressed tomorrow that is not a problem I think we can just leave them in there and let OMB/CEA know that we will address them at a later time.

I have also attached the tracked version in case you find it useful, but if you could add your edits as tracked changes in the "clean" version I think that would be most helpful. Give me a call if you want to talk about any of this. I would like to get this back to Jim tomorrow evening.

Thanks.

--

Alex Marten
marten.alex@epa.gov

From: Shouse, Kate
Sent: Friday, January 23, 2015 4:45 PM
To: Marten, Alex; Kopits, Elizabeth
Subject: Re: RTC current version

Hi, Alex. I went through and cleaned up some comment boxes but left those with yellow highlighting - not sure if EPA wants to resolve those questions before sending to Jim. I also flagged a comment in yellow in the uncertainty section. Didn't get a chance to dig up the underlying comment letter(s) but will do so on Monday. Please let me know what you want to do with that section (leave comments or attempt to draft some of the suggested changes) and I can help out.

Also made a few edits to the model selection section, FYI. Tried to remove some repetition within those paragraphs (the 2010 TSD quote is very similar to our elaboration) but please let me know if I inadvertently deleted a key point.

thanks,
Kate

From: Marten, Alex
Sent: Friday, January 23, 2015 2:33 PM
To: Shouse, Kate; Kopits, Elizabeth
Subject: RE: RTC current version

That sounds good to me. Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Message-----

From: Shouse, Kate
Sent: Friday, January 23, 2015 2:15 PM
To: Kopits, Elizabeth; Marten, Alex
Subject: Re: RTC current version

Thanks! Alex, I'm going to start going through this version now and can send you any changes I have. Let me know if you prefer a different approach, though. Thanks!

From: Kopits, Elizabeth
Sent: Friday, January 23, 2015 1:34 PM
To: Marten, Alex; Shouse, Kate
Subject: RTC current version

Hi guys- here is the current version. I got through the whole thing and tried to cleanup some of the comment boxes but it still needs work.
I have to finish up some work on a different paper (or my coauthors will hate me) but please feel free to call me if you would like to discuss more by phone this afternoon.

Best,
Elizabeth

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